In the Claims:

1. (Currently amended) A method for the production of a plurality of optoelectronic semiconductor chips each having a plurality of structural elements with respectively at least one semiconductor layer, the method comprising the steps of ~~at least the following method steps~~:

~~provision of~~ providing a chip composite base having a substrate and a growth surface;

~~growth of~~ growing a non-closed mask material layer onto the growth surface in such a way that the mask material layer has a plurality of statistically distributed windows having varying forms and/or opening areas, a mask material being chosen in such a way that a semiconductor material of the semiconductor layer that is to be grown in a later method step essentially cannot grow on said mask material or can grow in a substantially worse manner in comparison with the growth surface;

essentially ~~simultaneous growth of~~ simultaneously growing semiconductor layers on regions of the growth surface that lie within the windows; and

~~singulation of~~ singulating the chip composite base with applied material to form semiconductor chips.

2. (Original) The method as claimed in claim 1, in which

the chip composite base has at least one semiconductor layer grown epitaxially onto the substrate and the growth surface is a surface on that side of the epitaxially grown semiconductor layer which is remote from the substrate.

3. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the chip composite base has a semiconductor layer sequence grown epitaxially onto the substrate with an active zone that emits electromagnetic radiation, and the growth surface is a surface on that side of the semiconductor layer sequence which is remote from the substrate.

4. (Currently amended) The method as claimed in claim 1 ~~either of claims 1 and 2~~, in which the structural elements respectively have an epitaxially grown semiconductor layer sequence with an active zone that emits electromagnetic radiation.

5. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the mask material has SiO_2, Si_xN_y or Al_2O_3.

6. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which, after the growth of the semiconductor layers, a layer made of electrically conductive contact material that is transmissive to an electromagnetic radiation emitted by the active zone is applied to the semiconductor layers, so that semiconductor layers of a plurality of structural elements are electrically conductively connected to one another by the contact material.

7. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the average thickness of the mask material layer is less than the cumulated thickness of the semiconductor layers of a structural element.

8. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the mask material layer is at least partly removed after the growth of the semiconductor layers.

9. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which, after the growth of the semiconductor layer sequences, a planarization layer is applied over the growth surface.

10. (Original) The method as claimed in claim 9, in which a material whose refractive index is lower than that of the semiconductor layers is chosen for the planarization layer.

11. (Currently amended) The method as claimed in claim 9 ~~or 10~~, in which a material which has dielectric properties is chosen for the planarization layer.

12. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the growth conditions for the growth of the mask material layer are set in such a way that three-dimensional growth is predominant and the mask material layer is predominantly formed from a plurality of three-dimensionally growing crystallites.

13. (Currently amended) The method as claimed in claim 1 ~~one of claims 1 to 11~~, in which the growth conditions for the growth of the mask material layer are set in such a way that two-dimensional growth is predominant and the mask material layer is predominantly formed from a plurality of two-dimensionally accreting partial layers.

14. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the growth conditions for the growth of the mask material layer are set in such a way that most of the windows are formed with an average propagation of the order of magnitude of micrometers.

15. (Currently amended) The method as claimed in claim 1 ~~one of claims 1 to 13~~, in which the growth conditions for the growth of the mask material layer are set in such a way that most of the windows are formed with an average extent of less than or equal to 1 μm.

16. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the growth conditions for the growth of the semiconductor layers are set and/or varied during growth in such a way that semiconductor layers of the structural elements at least approximately form a lenslike form.

17. (Currently amended) The method as claimed in claim 1 ~~one of the preceding claims~~, in which the mask material layer and the semiconductor layers are grown by means of metal organic vapor phase epitaxy.

18. (Currently amended) An optoelectronic semiconductor chip, characterized in that it is produced according to a method as claimed in claim 1 ~~one of the preceding claims~~.